

## **CLAIM REJECTIONS - 35 U.S.C. §112**

The Examiner has rejected claims 39-42 and 45 under 35 U.S.C. 112, as containing subject matter not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. The specification fails to teach how one of ordinary skill in the art is to determine the acidity, moisture content, or chemical content merely by the fragrance of the mulch.

Claim 39 relates to a fragranced mulch product comprising a mulch product; and a fragrance. The fragrance indicates to a user environmental conditions of the soil where the mulch is placed. In claim 40, the fragrance indicates to a user the acidity of the soil. In claim 41, the fragrance indicates to a user the moisture content of the soil. In claim 42 the fragrance indicates to a user the chemical content of the soil.

For example, persons who drink wine first smell the wine to determine how the wine will taste. In some case the wine has an acidic smell. The smell of ammonia means that a product has a basic chemical content. Therefore, it would be obvious to one of skill in the art that a fragrance can determine the acidity, moisture content or chemical content.

Further, claim 45 states that the fragrance provides a scent similar to a flower of a seed planted with the mulch. The smell of roses is used in sprays. In the present invention the fragrance of a flower, such as a rose, is added to a mulch which is then used to cover rose seeds.

**CLAIM REJECTIONS 35 U.S.C. §102**

The Examiner has rejected claim 47 as being anticipated by Hoblit, 3,252,785.

Regarding Claim 47, the Examiner states that Hoblit discloses a colored mulch product consisting essentially of a material comprising a fiber cellulose, clay, loam, sand, and/or a combination of same (col. 2, line 17-19); a binding agent (col. 5, line 15-25, col. 8, line 5-6); an environmentally friendly dye and/or pigment (col. 3, line 22-24) and the colored mulch product is produced by an agglomeration operation (col. 3, line 59).

Hoblit does not teach that the colored mulch product is produced by an agglomeration operation. The Examiner refers to column 3 line 59 which states that the mixture is sprayed onto the particulate carrier in a rotary mixer and, as will be recognized, the potassic ingredient may be mixed in a dry state with the particulate carrier or it may be dissolved in the nutrient liquor. Hoblit specifically states that the ingredients which are added to the cob granules are taken up by the cob granules either by absorption or adsorption. Agglomeration is defined as adding mass to the particle. Hoblit specifically teaches away from an agglomeration operation.

Hoblit does not teach a colored mulch product produced by an agglomeration operation. Therefore claim 47 is not anticipated nor obvious over Hoblit.

Hoblit relates to commercial fertilizers and pesticides and especially to fertilizer and pesticide products adapted to application to lawns. Hoblit relates to formulating fertilizer and pesticide products to comprise plant nutrient materials absorbed on a particulate carrier, and preferably ground corn cobs are employed for the carrier material. Products exhibit a high bulk to weight ratio and are readily provided with a uniform attractive color. Also, the product is highly absorbent of plant nutrient liquors resulting

in deep penetration thereof into the carrier products, promoting a gradual release of the nutrients in use. Because of its organic nature, the carrier material is subject to decay upon application to the soil whereby to break down forming humus.

Hoblit defines carrier as a material which is capable of absorbing plant nutrient liquors, which is capable of retaining the plant nutrients when subjected to the mild heat and moving air currents used to drive out excessive moisture as well as being capable of retaining pesticidal materials and which releases the nutrients in pesticides on being exposed to the elements and to the conditions of the end use environment.

The carrier of Hoblit is comparatively water insoluble and is relatively chemically inert, entering into no reactions with the plant nutrients or pesticides. The carrier is selected to be of organic, vegetable origin, comprising appreciable quantities of cellulose. It is thus susceptible of biochemical decomposition adding humus to the soil in conjunction with the plant nutrient amendments.

The nutrient materials contemplated for use in the fertilizer product of Hoblit are specially nitrogen, phosphorous and potassium. Because the plant nutrients are intended to be applied to the plant material in liquid form, nitrogen is desirably provided as a water solution of either ammonia, urea or both. Phosphorus is supplied in the form of phosphoric acid. And potassium may be supplied in the form of its soluble salts.

So that the finished product is appealing to the eye and is easily discernable when applied to the lawn, a coloring agent is desirably incorporated and numerous dyes and pigments have been successfully employed. Such mineral pigments as yellow ochre, mineral black and red iron oxide might prove to be useful. Water soluble dyes are for

example, auramine yellow and those of the tropaeolin type for example are metanil yellow. Also useful are pontacyl black, green, orange and wood stained.

The Examiner has rejected claim 39 as being anticipated by GB 2170795A to Rudolf. The Examiner states that regarding claims 39 and 42, Rudolf teaches applicant's broad claim language since Rudolf discloses a mulch with horse and poultry manure as a component (Abstract and pg. 1 line 37). This manure component inherently has a fragrance associated with it and the fragrance will inherently indicate to a user environmental conditions/chemical content of the soil where the mulch is placed since over time the fragrance will dissipate and fade as the mulch ages indicating that the manure nutrients have decreased and been absorbed into the soil.

Regarding claims 40 and 41, the Examiner states that Rudolf teaches the use of animal manure along with stable material. The stable material also contains animal waste in the form of urea. Urea is known to be strongly acidic and fragrant. The incorporation of these components into the mulch of Rudolf inherently teaches that one of skill in the art would be able to determine the acidity of the soil from the fragrance since a strong fragrance would indicate that the manure/urea is present in the mulch and over time as the fragrance naturally weakens the manure/urea nutrients are absorbed into the surrounding soil. Similarly with the moisture content, one of skill would inherently be able to determine the moisture content since it is old and well-known in the art of mulches that a saturated wet mulch (thus a high soil moisture content) smells different than a dry mulch (thus a low soil moisture content).

Rudolf relates to a composite mulch made from cellulose fiber and lignin, a solid fertilizer which will only release its nutrient content slowly, a weed suppressant which

will only kill seeds as they germinate, shredded or pulverized bark and peat in the preferred but not essential proportions, by weight 23.50%, 30.00%, 1.50%, 30.00% and 15.00% respectively. The cellulose fiber and lignin may be made from waste newspapers, magazines, books, cardboard or kraft paper. The solid fertilizer may be chemical of the controlled release type or may be organic fertilizer made from rotted waste from poultry rearing deep litter houses; crushed feathers, bones, heads or feet of poultry; cow or horse manure and the incorporated bedding material from cow sheds or stables; waste being milled into small particles and dried.

Claim 39-42 as amended requires that a separate fragrance distinct from the mulch be added to the product and that the fragrance either appears or changes based on the environmental conditions of the soil. Rudolf teaches a mulch composite wherein the manure is part of the mulch and therefore, the fragrance is the fragrance of the mulch, not a separate fragrance. Further the claims require that the fragrance either appear or change based on the environmental conditions. Rudolf does not teach that the manure odor change or appear based on the environmental conditions. In fact, the odor is present when the mulch is added to the soil and Rudolf does not teach that the odor changes or appears based on environmental conditions. Therefore, Rudolf does not anticipate nor make obvious claims 39-42 of the present invention.

### **Claim Rejections 35 U.S.C. §103**

The Examiner has rejected Claim 36 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,252,785 to Hoblit in view of U.S. Patent No. 4,067,140 to Thomas.

Regarding claim 36, the Examiner states that Hoblit teaches a colored mulch product of a fiber cellulose, clay, loam, sand and/or combination (Hoblit Col. 2 lines 17-19), a binding agent (Hoblit Col. 5 lines 15-25; Col. 8 lines 5-6), a black or dark dye (Hoblit Col. 3 line 30). Hoblit does not explicitly teach that a black mulch heats the soil. However, Thomas teaches that it is an old and well-known function of a mulch layer to heat the soil (Thomas Col. 1 line 9). Furthermore, it is old and well-known in the art of heat transfer that the color black has an emissivity of one. Therefore, the black dye of Hoblit would inherently heat the soil where the mulch was placed when exposed to sunlight.

Hoblit discusses that the finished product will be appealing to the eye and easily discernable when applied to the lawn when a coloring agent is desirably incorporated and numerous dyes and pigments have been successfully employed in this regard. Such mineral pigments as yellow ochre, mineral black and red iron oxide have proved to be useful. Water soluble dyes such as auramine yellow and those of the tropaeolin type, for example, metanil yellow, are valuable for the purpose. Similarly useful are Pontacyl Black, Pontacyl Green NB, Orange RO and Wood Stain Scarlet NS.

Thomas states in the section cited by the Examiner that a mulch of sawdust or finely divided chips of wood has been previously spread over soil to provide a protective covering, reduce evaporation, retain heat in the soil, promote germination of seeds such as grass seed, retard the growth of weeds and enrich the soil. Such a mulch of sawdust or wood chips has been previously applied to the soil by mixing the mulch with water and spraying a stream of the mixture of mulch and water onto the soil. Grass seed and fertilizer have also been added to the mixture of mulch and water and the entire mixture

sprayed onto the soil to simultaneously scatter or sow the grass seed upon the soil, provide fertilizer and moisture for the grass seed, and heat and enhancing germination of the grass seed. Thomas colors the mulch a pleasing color such as green.

Claim 36 requires that a black or darkly colored mulch when exposed to sunlight heat the soil. Thomas teaches that a well known principle is that the mulch when covering the soil serves to retain heat. The mulch in this case serves as a covering. The sunlight in this case does not heat the mulch to then heat the soil. It is the black or dark colored mulch which is heated by the sunlight and then heats the soil. Neither Hoblit nor Thomas alone or in combination teach or make obvious this claim. Thomas teaches using a green dye to make the mulch a pleasing color. Therefore it would not be obvious to use a dark or black dye of Hoblit with Thomas. Further, just because a black dye can be mixed with the mulch of Hoblit does not mean that it cover the mulch to absorb light and heat the soil as taught by claim 36 of the present invention.

The Examiner has rejected claim 37 as being obvious over Hoblit in view of JP06-245654 to Yoshinobu. Regarding claim 37, the Examiner states that Hoblit teaches a colored mulch product of a fiber cellulose, clay, loam, sand and/or combination (Hoblit Col. 5 lines 15-25; Col. 8 lines 5-6). Hoblit is silent on a white or light dye that reflects sunlight and reduces heating of the soil. Yoshinobu teaches dying mulch white to reflect sunlight (Yoshinobu English Abstract). The Examiner states that it would have been obvious to apply the teachings of Yoshinobu to Hoblit for the enhanced heat transfer qualities taught by Yoshinobu to promote plant growth and reduce weeds.

Yoshinobu relates to mulch paper being colored on one side. The mulch paper has ready handleability by biodegradation free from pollution by coloring only one side

of the paper. Only one side of the paper comprising wood pulp or another cellulose fiber as a base is colored, 10% Hunter whiteness and only one side of the paper is made to readily absorb sunlight. When the colored face is turned to the surface, weeds are effectively suppressed and when the noncoloring face is turned to the surface, rise in soil temperature is effectively subdued.

Claim 37 as amended relates to a colored mulch having a white or light dye and/or pigment which covers the entire mulch product, reflects sunlight, and reduces heating of soil where the mulch is placed. Yoshinobu only colors one side of a mulch paper. The present invention colors entire mulch product white to reflect sunlight and reduce heating of the soil. Yoshinobu has to physically turn all of the mulch to the light side for it to reflect sunlight. Further, Hoblit does not teach using a white or light dye. Further Hoblit teaches mixing the dye with the mulch, not adding the dye to only one side of the mulch. Therefore, it would not be obvious to combine Yoshinobu with Hoblit. Therefore, claim 37 is not obvious over Hoblit in view of Yoshinobu.

The Examiner has rejected claim 45 as being obvious over Rudolf in view of 5,105,577 to Hedges. Regarding claim 45, the Examiner states that Rudolf is silent on applying a scent similar to a flower of a seed planting in mulch. However, Hedges teaches applying a scent to a mulch (Hedges Col. 3 lines 65). The mulch of Hedges could surround the seed/seedling of a pine tree or a lemon tree. It would have been obvious to modify the teachings of Rudolf in order to obtain a "more" pleasant smell and by selecting a scent similar to the seed planted achieve a harmonious smell.

Claim 45 relates to a fragranced mulch wherein the fragrance provides a scent similar to the flower of the seed planted with the mulch. The purpose of this is not to



have a more pleasant smell. As stated in the specification, adding a scent to the mulch assists the users in determining what type of particular seeds are located in that area. Further, the fragranced mulch assists a user to determine the aroma of the flower which will come when the flower blooms. This is important when a user is planting a variety of flowers to determine if one fragrance will dominate another fragrance or not provide the wanted scents.

Hedges relates to artificial mulching chips. The surface of the chip is embossed with a design providing additional surface area, facilitating diffusion to surrounding environment of fugitive active ingredients when the same are contained therein, including, for example, animal repellants, insecticides, or odorants.

One aspect of Hedges is to provide chip-like mulches that can be formed to include fugitive active agents which impart pleasing scents to the mulches and which can act as repellants to unwanted animal life. Hedges discloses mulch chips formed to include odorant materials, for example, pine scent, lemon scent, cinnamon, or other fragrances of the kind that tend to make an area more pleasant.

Hedges does not teach using scents of flowers planted under the mulch being applied to the mulch. Hedges specifically uses the scents to impart pleasing scents. There is no correlation between the seeds planted under the mulch and the scent added to the mulch. Hedges uses odorant materials, for example, pine scent, lemon scent, cinnamon, or other fragrances that make an area more pleasant. Hedges therefore teaches using a pine scent even if a rose seed is placed underneath the mulch.

Therefore, claim 45 is not obvious over Rudolf in view of Hedges.

The Examiner has rejected claims 26-30 and 38 as being obvious over Hoblit in view of 6,029,394 to Kananen. Regarding claims 26-30, the Examiner states that Hoblit teaches a colored mulch product of a material comprising a fiber cellulose, clay, loam, sand; a binding agent; a fertilizer; and a dye/pigment. (Hoblit Col. 2 lines 17-19; Col. 5 lines 15-25; Col. 8 lines 5-6; Col. 6 line 65). Hoblit is silent on the dye indicating to the user environmental conditions of soil where the mulch is placed. However, Kananen teaches that measuring the color of a compost is an old and well-known means of determining the chemical and environmental conditions. (Kananen Col. 8 lines 18 and 23-24). It would have been obvious to modify the teachings of Hoblit with the teachings of Kananen as a non-evasive means to monitor the levels in the soil to assure proper dosages are applied promote plant growth.

Kananen relates to a mushroom spawn supplement comprising a mixture of at least one proteinaceous ingredient in an amount to provide at least 3.5% nitrogen on a dry weight basis; 2 to 30% based on dry weight of paper pellets; 5 to 60 wt % based on dry weight of at least one particulate material; a buffer in an amount effective to provide a pH of about 6 to 7.8 and water; and colonized with *Agaricus bisporus* mycelium. The invention relates to the art of mushroom cultivation and pertains to an improved mushroom spawn-supplement that efficiently inoculates the mushroom substrate and provides an improved nutrient source for promoting mushroom growth.

The portions of Kananen cited by the Examiner relate to objectively measuring spawn run time. Batches of compost were inoculated with varying levels of a standard rye grain spawn with or without supplementation with S41 mushroom supplement or varying levels of spawn-supplement formula 83 (Example 1) with or without S41

mushroom supplement. At daily intervals, the color of the surface of the compost was measured using a Minolta color meter. Color was expressed on a "delta E" scale, where a smaller number represents a white color. Uninoculated compost typically has a delta E value of about 75 arbitrary units. A standard 3% spawning rate with rye spawns results in a delta E of 57 arbitrary units after 13 days of spawn run. Therefore, a delta E of 57 was taken as a color value representing a completed spawn run. The time required for other experimental treatments to reach a delta E of 57 was calculated from daily color determinations. The results of the test are summarized in Fig. 2.

Claims 26-30 relate to a colored mulch product wherein the dye indicates to the user the environmental condition of the soil where the mulch is placed. Hoblit is silent on the dye indicating to the user environmental conditions of soil where the mulch is placed. The Examiner states that Kananen teaches that measuring the color of a compost is an old and well-known means of determining the chemical and environmental conditions. It would have been obvious to modify the teachings of Hoblit with the teachings of Kananen as a non-evasive means to monitor the levels in the soil to assure proper dosages are applied promote plant growth. Kananen relates to objectively measuring spawn run time. Batches of compost were inoculated with varying levels of a standard rye grain spawn with or without supplementation with S41 mushroom supplement or varying levels of spawn-supplement formula 83 (Example 1) with or without S41 mushroom supplement. At daily intervals, the color of the surface of the compost was measured using a Minolta color meter. Color was expressed on a "delta E" scale, where a smaller number represents a white color.

Kananen does not add a dye or pigment to the compost. Further, Kananen measures spawn run time based on the color of the surface of the compost. There is no teaching in Hoblit to combine the teachings of Kananen. Further, Hoblit adds a dye to make the mulch more appealing to the eye. Hoblit in view of Kananen does not teach or make obvious the use of a dye to indicate to a user the environmental conditions of the soil. Therefore claims 26-30 are not obvious. Further regarding claims 28-30, neither Hoblit nor Kananen teach a dye which indicates to a user: the acidity of the soil, the moisture content of the soil, and the chemical content of the soil.

Regarding claim 38, the Examiner states that Hoblit inherently teaches the same or similar color of an actual plant, flower, fruit or vegetable of a seed planted with the mulch since Hoblit teaches the use of a green dye (Hoblit Col. 3 line 30) and predominantly all plants have green colors in the stem, leaves, etc.

Hoblit teaches using a green dye because it is pleasing to look at. Claim 38 teaches coloring a mulch the same color as the plant which is planted underneath the mulch. The reason for this is to assist a user in identifying the seeds which were planted underneath the mulch. According to Hoblit all mulch would be green. This would not provide the colored mulch as required by the present invention. For instance if a red rose was planted under the mulch of the present invention, the mulch above the seed would be red, whereas with Hoblit it would be green. Therefore, claim 38 is not obvious over Hoblit.

The Examiner has rejected claims 26-30, 32 and 38 as being obvious over Hoblit in view of 4,126,417 to Edwards. Regarding claims 26-28, 30 and 50, the Examiner states that Hoblit teaches a colored mulch product of a material comprising a fiber

cellulose, clay, loam, sand; a binding agent; a fertilizer; and a dye/pigment. (Hoblit Col. 2 lines 17-19; Col. 5 lines 15-25; Col. 8 lines 5-6; Col. 6 line 65). Hoblit teaches that fertilizer is a component of the mulch, but Hoblit is silent on the dye indicating to the user environmental conditions of soil where the mulch is placed. However, Edwards teaches both applying a colored fertilizer to a mulch and in addition using a color identification means to determine the environmental and chemical content of the soil. (Edwards Abstract and Col. 1 lines 10 and 27-28). As the fertilizer component of the mulch dissolves into the soil the color of the mulch is inherently going to change and fade over time thus indicating a change in the soil conditions. It would have been obvious to apply the teachings of Edwards to the teachings of Hoblit since it is old and well-known in the art of agrochemicals to color the chemicals so one can easily identify an area that has received treatment and to identify what chemical was applied. It would have been obvious to modify the mulch of Hoblit with the indicating means of Edwards as a non-evasive means of monitoring the soil's acidity and moisture content.

Edwards relates to a means for testing and treatment of soil in which a plant is growing in a container. A testing and treatment kit, a soil testing device and a procedure adapted for the home owner, especially for raising plants in containers is described. A stick having a pH-testing coating on one side and a nitrate-testing coating on the other side, the coatings changing colors during testing and being juxtaposed to colored sections for matching purposes to determine pH and nitrate levels. The kit including color-coded nitrate-increasing and acid-increasing pills, as well as color coded fungicide and insecticide pills. The colored sections having indicia indicating the numbers of nitrate and acid pills to be added to a given quantity of water to produce solutions used in

watering the soil properly correcting nitrate and acid soil conditions. Nowhere does Edwards teach that the mulch changes color. Colored pills are added to water which is then used to water the soil. There is not even any discussion of a mulch being used by Edwards.

The invention relates to means to assist the home owner in growing plants in a container from which effluent may be obtained in which seven special, interrelated materials are required in addition to water. They are: (1) a growing media, (2) a fertilizer, (3) an acidifier, (4) a nitrate indicator, (5) a pH indicator, (6) an insecticide, and (7) a fungicide. The media contains no fertilizer other than limestone used for pH correction, contains no quickly rotatable organics such as peanut hulls, corncobs, sawdust, manure or sedge peat moss, contains no fine clay which would cloud the effluent. It must drain quickly, retain enough water so that watering is not required frequently, and contain enough air immediately after being drained that it will support plant growth. Therefore, Edwards teaches against using a mulch.

Edwards teaches recovering water from the container and testing the water recovered with the stick. Edwards specifically relates to testing water which seeps through a container having a plant. Edwards specifically states that the soil can not contain any mulch because it would cloud the effluent. Further, the colored pills for fertilizer, nitrate, etc., are diluted in a solution and then added to the soil. The colored pills are only for aiding the person in determining what has to be added to the soil. The soil and/or mulch is never colored.

Therefore, Hoblit in view of Edwards does not make obvious claims 26-30, 32 and 38.

Regarding claim 38, the Examiner states that Hoblit as modified inherently teaches the same or similar color if an actual plant, flower, fruit or vegetable of a seed planted with the mulch since Hoblit teaches the use of a green dye (Hoblit Col. 3 line 30) and predominately all plants have green colors in the stem, leaves, etc.

Hoblit teaches using a green dye because it is pleasing to look at. Claim 38 teaches coloring a mulch the same color as the plant which is planted underneath the mulch. The reason for this is to assist a user in identifying the seeds which were planted underneath the mulch. According to Hoblit all mulch would be green. This would not provide the colored mulch as required by the present invention. Therefore, claim 38 is not obvious over Hoblit.

Regarding claim 32, the Examiner states that Hoblit as modified is silent of the dye being fluorescent allowing the mulch to glow in the dark. However, it would have been obvious to modify the teachings of Hoblit since the modification is merely a change in color and the selection of a known material for intended use to prevent people from walking on the treated area in the evening and for an aesthetic effect and does not present a patentably distinct limitation.

Hoblit teaches a green dye for aesthetic purposes. There is nothing in Hoblit which teaches using a colored mulch to prevent people from walking on an area. Further since the use of the dye is to indicate environmental conditions of the soil, Hoblit does not make claim 32 obvious.

Further based on the above prior art, applicant believes that new claims 51-53 are not anticipated nor obvious over the prior art.

Applicant now believes that the application is in condition for allowance.

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a black or dark dye and/or pigments which heats soil where said mulch is placed when said mulch is exposed to sun light.

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37. A colored mulch product consisting essentially of:

ip | a material comprising a fiber cellulose, clay, loam, sand, and/or

a combination of same;

a binding agent; and

a white or light dye and/or pigment which covers the entire mulch product, reflects sunlight, and reduces heating of soil where said mulch is placed.

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38. The colored mulch of claim 26 wherein said mulch is the same or similar color of an actual plant, flower, fruit or vegetable of a seed planted to said mulch.

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39. A fragranced mulch product comprising:

2 | a mulch product; and

a separate fragrance distinct from any fragrance from said mulch product;

bp | said fragrance changing or appearing to indicate to a user environmental conditions of soil where said mulch is placed.

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40. The fragranced mulch of claim 39 wherein said fragrance indicates to a user the acidity of said soil.

41. The fragranced mulch of claim 39 wherein said fragrance indicates to a user the moisture content of said soil.

49. A colored seed product wherein said color changes in response to a lack of fertilizer.

50. A colored mulch product wherein said color fades or disappears in response to a lack of nutrient or fertilizer in said mulch.

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51. A method for identifying a seed planted under a mulch comprising:

homogeneously blending a colorant of same color as flower of said seed before or after an agglomeration step with a mulch;

placing said colored mulch over said seed.

52. A method for adjusting the chemical content of soil comprising:

placing a colored mulch on top of soil;

changing colors of said mulch based on condition of said soil;

adding chemicals to said soil based on said color of said mulch.

53. A method for adjusting the chemical content on soil comprising:

placing a fragranced mulch on top of soil;

changing fragrance of said mulch based on condition of said soil;

adding chemicals to said soil based on said fragrance of said mulch.

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